REMARKS/ARGUMENTS

Claims 19-42 are in the case. No claim amendments are presented herewith.

I. DOUBLE PATENTING

Claims 19, 24-30, and 38 stand rejected on obviousness-type double patenting grounds as allegedly constituting obviousness-type double patenting over claims 1 and 12-14 of U.S. Patent 6,794,535. In response, and without conceding to the merit of the Examiner's rejection, a Terminal Disclaimer executed by the undersigned is submitted herewith. Withdrawal of the outstanding obviousness-type double patenting rejection is now respectfully requested.

II. THE 35 U.S.C. §103(a) REJECTION

Claims 19-42 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over EP 0757027 to Atkins et al in view of Japanese Patent 7-71907 to Nishino et al. That rejection is respectfully traversed.

The parent of the present application, namely application Serial No. 09/215,299 filed December 18, 1998, was the subject of Appeal No. 2003-0821, in which a decision was mailed on January 15, 2004. A copy of that decision is attached for the Examiner's review. The issues considered by the Board of Patent Appeals and Interferences in that appeal was obviousness of the pending claims over the same prior art relied on in the outstanding Official Action and a formal rejection under 35 U.S.C. §112, second paragraph. The obviousness rejection was reversed. The formal rejection was sustained.

The claims appealed in the '299 parent application were the same as claims 19-42 currently pending before the Examiner in the present application, with the exceptions that, in the currently pending claims, the language "within a pre-determined range" has been replaced in new claim 19 with the language "within a range of 10:1 to 16:1" and, in claim 20 of the present application (which is the same as claim 2 of the '299 parent application), the word "substantially" no longer appears. This amendment to remove the word "substantially" is believed to obviate the formal point raised in the parent application (it is noted that no 35 U.S.C. §112, second paragraph, rejection appears in the outstanding Official Action in the present application).

In light of the reversal by the Board in the '299 parent application of the obviousness rejection of similar claims over the same art relied upon in the outstanding action, it is believed that claims 19-42 are patentable over that art. Reconsideration and withdrawal of the outstanding obviousness rejection are accordingly respectfully requested.

Favorable action on this application is awaited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

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Executed Terminal Disclaimer

608-141
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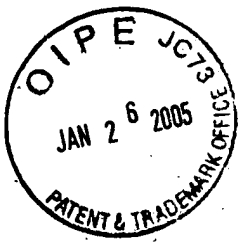

The opinion in support of the decision being entered today was ***not*** written for publication and is ***not*** binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex Parte STANLEY JOHN BECKER, GEOFFREY BRYNE,
SIMON FREDERICK THOMAS FROOM, and STEPHEN R. HODGE

DATES DOCKETED
REQ REHEARING/APPEAL TO COURT
DUE MAR 15 2004
C/U FEB 15, 2004
3/

Appeal No. 2003-0821
Application 09/215,299

HEARD: November 18, 2003

MAILED

JAN 15 2004

PAT. & T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Before, WALTZ[1], KRATZ and JEFFREY T. SMITH, ***Administrative Patent Judges***.

JEFFREY T. SMITH, ***Administrative Patent Judge***.

Decision on appeal under 35 U.S.C. § 134

Applicants appeal the decision of the Primary Examiner finally rejecting claims 1-24, all of the pending claims.[2] We have jurisdiction under 35 U.S.C. § 134.

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[1] Paul Lieberman, Administrative Patent Judge, who participated in the oral hearing for this appeal, is now retired. Therefore, Thomas A. Waltz, Administrative Patent Judge, has been added to the panel for participation in the subject decision. Reargument is not required. See In re Bose Corp., 772 F.2d 866, 869, 227 USPQ 1, 4 (Fed. Cir. 1985).

[2] In rendering this decision, we have considered Appellants' arguments presented in the Brief filed September 25, 2001 and the Reply Brief filed May 28, 2002.

BACKGROUND

Appellants' invention is directed to a process for the synthesis of esters by reacting an olefin with a lower carboxylic acid in the presence of an acidic catalyst. Claim 1 which is representative of the invention is reproduced below:

1. A process for the production of a lower aliphatic ester said process comprising reacting a lower olefin with a saturated lower aliphatic monocarboxylic acid in the vapor phase in the presence of a heteropolyacid catalyst wherein the reaction is carried out in a plurality of reactors set up in series such that gases exiting from a first reactor are fed as a feed gas to a second reactor and those exiting from the second reactor are fed as a feed gas to a third reactor and so on for the subsequent reactors, and wherein an aliquot of the reactant monocarboxylic acid is introduced into the feed gas to the second and subsequent reactors so as to maintain the olefin to monocarboxylic acid ratio in the feed gas to each of the second and subsequent reactors within a pre-determined range.

PRIOR ART

As evidence of obviousness, the Examiner relies on the following references:

Atkins et al. (Atkins)	EP 0757027	Feb. 05, 1997
Nishino et al. (Nishino)	JP 7-17907	Jan. 20, 1995[3]

[3] We rely upon a full English translation of this document, now made of record.

THE REJECTIONS

The Examiner entered the following rejections:

Claims 1, 2, 11 and 20 are rejected as unpatentable under 35 U.S.C. § 112, second paragraph. (Answer, p.3).

Claims 1-24 are rejected as unpatentable under 35 U.S.C. § 103(a) over the combination of Atkins and Nishino. (Answer, pp. 3-6).

OPINION

The Rejection under § 112

The Examiner has rejected claims 1, 2, 11 and 20 under the second paragraph of § 112 as indefinite for failing to particularly point out and distinctly claim the subject matter which is regarded as the invention. (Answer, p. 3). Appellants, in the Reply Brief, do not contest this rejection. (See Reply Brief in its entirety). Accordingly, we summarily affirm the Examiner's rejection of claims 1, 2, 11 and 20 under 35 U.S.C. § 112, second paragraph.

The Rejections under § 103

Upon careful review of the respective positions advanced by Appellants and the Examiner, we find ourselves in agreement with Appellants' position in that the Examiner has failed to carry the burden of establishing a ***prima facie*** case of

obviousness. ***See In re Oetiker,*** 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); ***In re Piasecki,*** 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). Accordingly, we will not sustain the Examiner's rejections. We will limit our discussion to independent claims 1 and 20.

We find claims 1 and 20 are directed to a process for production of a lower aliphatic ester. The process comprises reacting a lower olefin with a saturated lower aliphatic monocarboxylic acid in the vapor phase in the presence of a heteropolyacid catalyst in a plurality of reactors set up in series. The reaction gases that exit from a first and subsequent reactors are fed as a feed gas to the next reactor. We also find that the process comprises adding a liquid aliquot of the reactant monocarboxylic acid to the feed gas that enters the second and subsequent reactors so as to maintain the olefin to monocarboxylic acid ratio in the feed gas to each of the second and subsequent reactors. within a pre-determined range.

According to the Examiner, Atkins discloses a process for the synthesis of esters by reacting an olefin such as ethylene with acetic acid in the presence of the heteropolyacid catalyst on a siliceous support derived from synthetic silica in a three-zone concentric tubular reactor equipped with a cooling jacket. The Examiner acknowledged that Atkins differs from the claimed invention. Specifically the

Examiner stated "Atkins et al differ from the instant invention in the followings: four reactors are set up axially in series, each reactor has a set of three concentric tubes, the prior reference does not suggest the addition of carboxylic acid to the feed of the second and subsequent reactors, and does not supplement the exit gas of the first reactor with fresh carboxylic acid." (Answer, p. 4).

According to the Examiner, Nishino discloses an apparatus comprising connected concentric long tubes reactor for producing ethyl acetate by reacting ethylene and acetic acid in the gas state in the presence of a heteropolyacid catalyst. The Examiner acknowledges that Nishino does not disclose adding carboxylic acid to the feed of the second and subsequent reactors. Specifically the Examiner states "[w]ith respect to the reference's failure to suggest the addition of carboxylic acid to the feed of the second and subsequent reactors, the reference is silent about that. However, the process does not have any patentably distinct step in the current invention over the prior art. In the multiple reactor process, it is quite natural that the monocarboxylic acid to olefin mole ratio in the feed is to be depleted drastically due to the consumption of the acid in the formation of the ester as the feed is passed through a series of reactors. Therefore, it would have been obvious for the skillful artisan in the art to have kept the ratio of the monocarboxylic acid to olefin constant

by the addition of carboxylic acid in each reactor throughout the process so as to increase the yield of the final product." (Answer, p. 5).

The Examiner further concluded "if the person with the skillful artisan in the art [sic] had desired to improve the reaction process by employing the optimum number of reactors as well as to control the space velocity rate throughout the whole apparatus, it would have been obvious for the skillful artisan in the art to have used Nishino et al's four tubular reactors in series with modified three concentric tubes in the Atkins et al's reactor by routine experimentations on the optimum number of reactors in order to minimize any pressure variations in the reactor system." (Answer, p. 6).

The Examiner has not provided adequate reasons why there is motivation to combine the references and why such a combination would have rendered the claimed subject matter unpatentable under 35 U.S.C. § 103(a). The Examiner acknowledges that both Atkins and Nishino fail to suggest the addition of carboxylic acid to the feed of the second and subsequent reactors. The mere fact that the prior art could be modified as proposed by the Examiner is not sufficient to establish a ***prima facie*** case of obviousness. ***See In re Fritch***, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). The Examiner must explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the modification. ***See Fritch***, 972 F.2d at

1266, 23 USPQ2d at 1783-84. The Examiner has failed to cite evidence in the prior art that the supports the suggestion to modify the cited references as proposed by the Examiner.

The record indicates that the motivation relied upon by the Examiner for adding a liquid aliquot of the reactant monocarboxylic acid to the feed gas that enters the second and subsequent reactors so as to maintain the olefin to monocarboxylic acid ratio in the feed gas to each of the second and subsequent reactors comes from the Appellants' description of their invention in the specification rather than coming from the applied prior art and that, therefore, the Examiner used impermissible hindsight in rejecting the claims. ***See W.L. Gore & Associates v. Garlock, Inc.,*** 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983); ***In re Rothermel,*** 276 F.2d 393, 396, 125 USPQ 328, 331 (CCPA 1960). Accordingly, we reverse the Examiner's rejection under 35 U.S.C. § 103(a) over the combination of Atkins and Nishino. The rejection of claims 1-24 is reversed.

CONCLUSION

The rejections of claims1, 2, 11 and 20 as unpatentable under 35 U.S.C. § 112, second paragraph, is affirmed.

The rejections of claims 1-24 as unpatentable under 35 U.S.C. § 103 over the combined teachings of Atkins and Nishino is reversed.

Time for taking action

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

THOMAS A. WALTZ
Administrative Patent Judge

PETER F. KRATZ
Administrative Patent Judge

JEFFREY T. SMITH
Administrative Patent Judge

) BOARD OF PATENT
) APPEALS AND
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